Synopsys Design Platform Certified for Samsung 8LPP Process Technology

Silicon-proven Reference Flow Provides Quality-of-Results and Time-to-Results Advantage for High-performance, Low-power Applications

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Highlights:

- 64-bit Arm® Cortex®-A53 processor used for quality-of-results (QoR) optimization and flow certification for Samsung's 8LPP process
- Synopsys Design Platform provides comprehensive full-flow support for multi-patterning and full color-aware variation for the 8LPP process
- Certified, scalable reference flow compatible with Lynx Design System available through the Samsung Advanced Foundry Ecosystem (SAFE™) program

Synopsys, Inc. (Nasdaq: SNPS) today announced that Samsung Electronics Co., Ltd., a world leader in advanced semiconductor technology, has certified the Synopsys Design Platform for Samsung Foundry's 8-nanometer (nm) LPP (Low Power Plus) process. The Synopsys Design Platform provides comprehensive full-flow support for multi-patterning and full color-aware variation for the 8LPP process. Synopsys' SiliconSmart® library characterization tool was key to developing the foundation IP used for this certification process and reference flow. This certification also includes a scalable reference flow compatible with Synopsys' Lynx Design System with scripts for automation and design best practices, which is available through the Samsung Advanced Foundry Ecosystem (SAFE™) program.

"Our 8LPP provides the most competitive scaling benefit before transitioning to EUV (Extreme Ultra Violet) lithography," said Ryan Lee, vice president of Foundry Marketing at Samsung Electronics. "Synopsys continues to be our vendor of choice for collaboration on new node development and enablement. Combining the 8LPP benefits in performance, power, and gate density with the Synopsys Design Platform quality-of-results and time-to-results advantages will enable our mutual customers to design the most competitive 8LPP system-on-chip (SoC) products for high-performance, low-power applications."

"Leading-edge customers have already deployed the silicon-proven Synopsys Design Platform to design and manufacture faster, more power efficient 8LPP chips," said Michael Jackson, corporate vice president of marketing and business development for Synopsys' Design Group. "With the reference flow broadly available through the Samsung SAFE program, all designers can now rapidly and confidently adopt Samsung Foundry's 8LPP process using the Synopsys Design Platform, and gain QoR benefits from the 8LPP narrower metal pitch."

The 64-bit Arm Cortex-A53 processor, based upon the Armv8-A architecture, was used for QoR optimization and flow certification. Key tools and features of the Synopsys Design Platform 8LPP reference flow include:

- IC Compiler™ II place-and-route: Multi-pattern and color-aware physical implementation flow with automated power ground (PG) synthesis and in-design IR-drop-aware refinement
- Design Compiler® Graphical RTL synthesis: Correlation, congestion reduction, and physical guidance for IC Compiler II
- DFTMAX™ and TetraMAX® II test: FinFET-based, cell-aware, and slack-based transition testing for higher test quality
- Formality® formal verification: UPF-based equivalence checking with state transition verification
- IC Validator signoff physical verification: High-performance DRC signoff, LVS-aware short-finder, signoff fill, pattern matching, and unique in-design verification for automated DRC repair and accurate timing-aware metal fill within IC Compiler II
- PrimeTime® timing signoff: Mode-merging, ultra-low voltage timing signoff with Advanced Waveform Propagation (AWP), Parametric On-Chip Variation (POCV) analysis, and placement rule-aware Engineering Change Order (ECO) guidance
- StarRC™ extraction: Multi-patterning, full color-aware variation, and 3D FinFET modeling

The certified, scalable reference flow compatible with Synopsys' Lynx Design System is available through the Samsung SAFE™ program. The Lynx Design System is a full-chip design environment that includes innovative automation and reporting capabilities to help designers implement and monitor their designs. It includes a production RTL-to-GDSII flow that simplifies and automates many critical implementation and validation tasks, enabling engineers to focus on achieving performance and design goals. The Samsung SAFE™ program

provides extensively tested process design kits (PDKs) and reference flows (with design methodologies) of Samsung Foundry.

About Synopsys

Synopsys, Inc. (Nasdaq: SNPS) is the Silicon to Software™ partner for innovative companies developing the electronic products and software applications we rely on every day. As the world's 15th largest software company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and is also growing its leadership in software security and quality solutions. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing applications that require the highest security and quality, Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at www.synopsys.com.

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